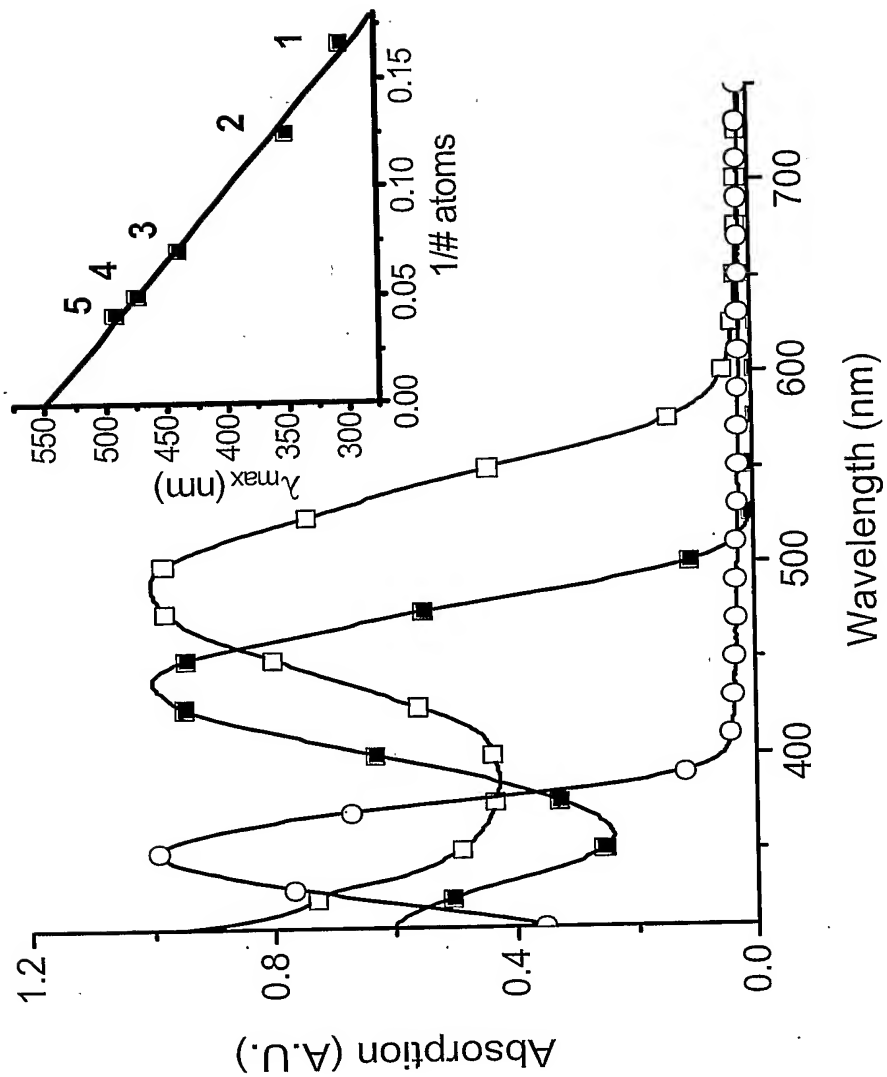
Absorption (A.U.)
1.2
0.8
0.4
0.0
400
500
600
700
Wavelength (nm)
λmax (nm)
550
500
450
400
350
300
0.00
0.05
0.10
0.15
1/# atoms
1
2
3
4
5

Figure 1.

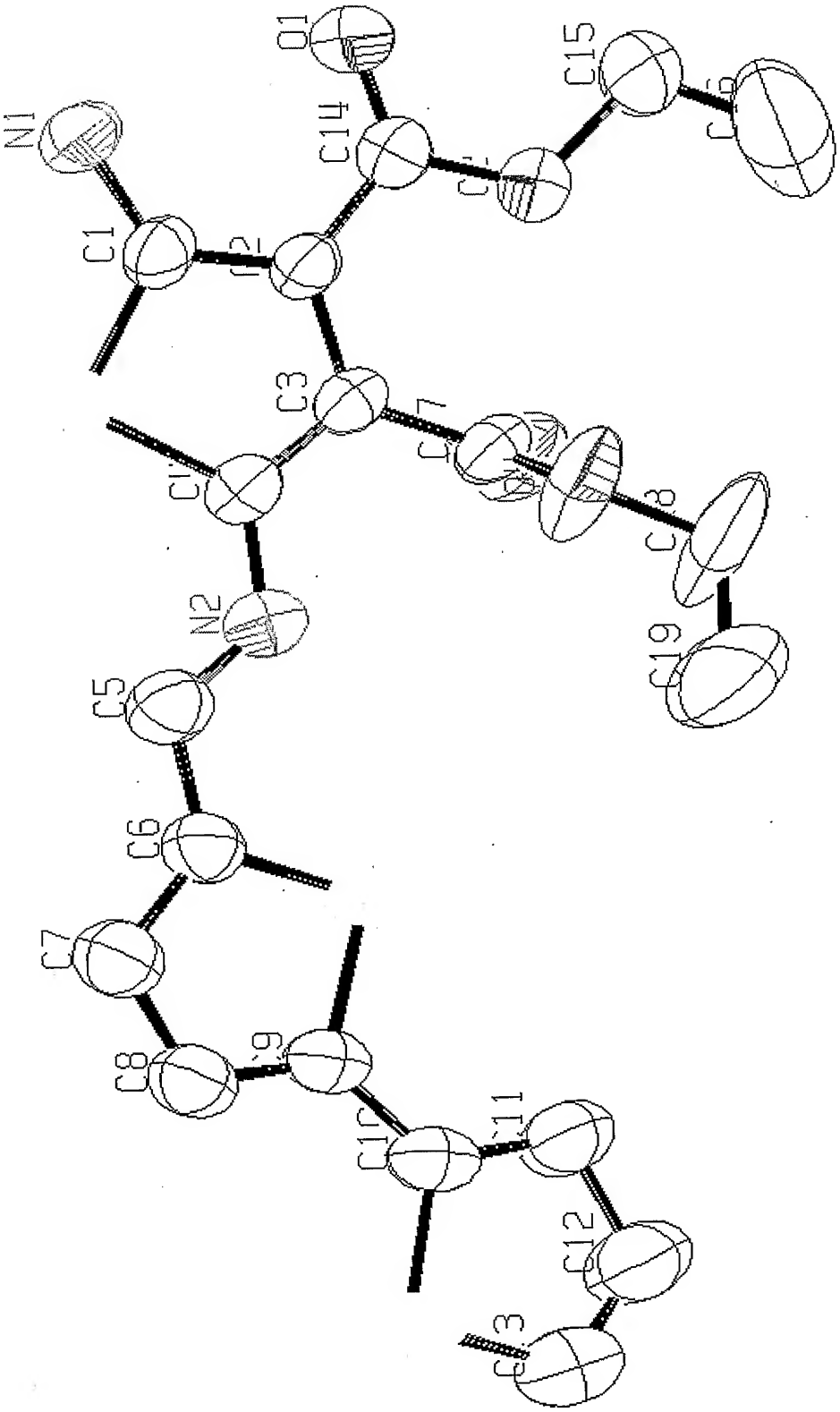
O1
C15
C16
N1
C14
C1
C2
C3
C17
C18
C4
N2
C19
C5
C6
C7
C8
C9
C10
C11
C12
C13

Figure 2.

Compound	λ_{abs} (nm)[b]	ε_{max} (M^{-1} cm^{-1})	λ_{em} (nm)[c]	ΔE (eV)[d]	E_g (eV)[e]	τ (ns)	Φ^f (10^{-2})	E_{pa}^1 V	E_{pa}^2 (V)	E_{pa}^3 V	E_{pa}^1 V	E_{pc}^2(V)
1	350	21 850	425	3.2	3.1	0.9	2.3	1.43	1.21	-	-1.17	-1.63
2	305		372	3.7	3.0	13.5	3.8	0.23	0.59	0.83	-1.44	-
3	440	25 489	530	2.5	2.3	6.2	0.04	0.24	1.02	1.85	-1.12	-1.84
4	470	31 530	610	2.2	2.1	2.9	0.33	0.96	1.23	1.73	-1.09	-1.85
5	492		542	2.3	1.9	5.8	0.42	0.98	1.57	-	-1.12	-1.88
6[g]	413	-	479	2.7	2.5	0.9	0.33	0.82	1.12	-	-	-
7	423	-		2.5	2.4	-	-	0.84	1.20	-	-	-

[a]Scan rate 1V/sec, 0.1 M Bu_4NPF_6, glassy carbon working electron, Ag/AgCl (sat'd) reference electrode, Pt-wire electrode vs. Fe/Fe^+; [b]Absorption; [c]Emission; [d]Refers to absolute HOMO-LUMO difference; [e]Spectroscopic band-gap; [f]Relative to bisthiophene;[10] [g]Literature values[11]

Figure 3.

Compound	Aryl-Aryl[a]	C=X[b]	=C-Aryl	Plane Angle[c]
2	1.443 Å	1.281 Å	1.439 Å	170°
Analogue[d]	1.479 Å	1.334 Å	1.614 Å	180°

[a]bisthiophene distance; [b]X=N for **2** and C for the analogue; [c]Refers to the aryl-C=X dihedral angle; [d]From Zobel for bisthiophene and thiophene alkene values.[12]

Figure 4.

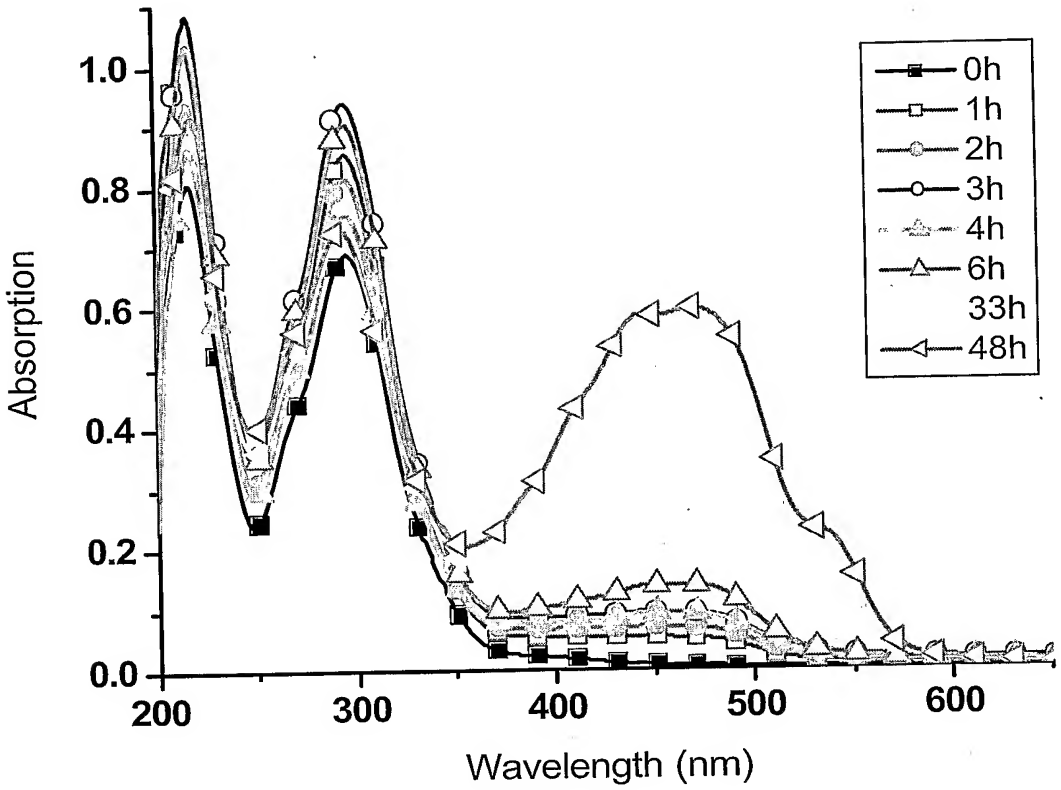
Absorption
1.0
0.8
0.6
0.4
0.2
0.0
200
300
400
500
600
Wavelength (nm)
0h
1h
2h
3h
4h
6h
33h
48h

Figure 5

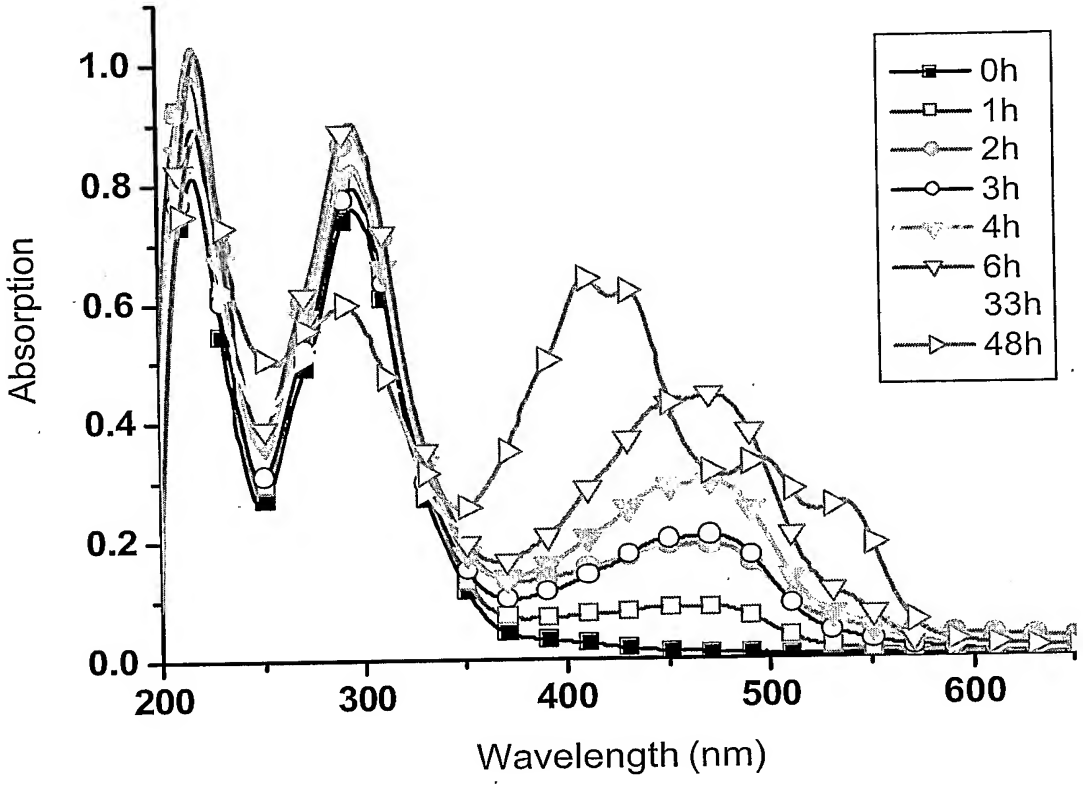
Absorption
1.0
0.8
0.6
0.4
0.2
0.0
200
300
400
500
600
Wavelength (nm)
0h
1h
2h
3h
4h
6h
33h
48h

Figure 6.

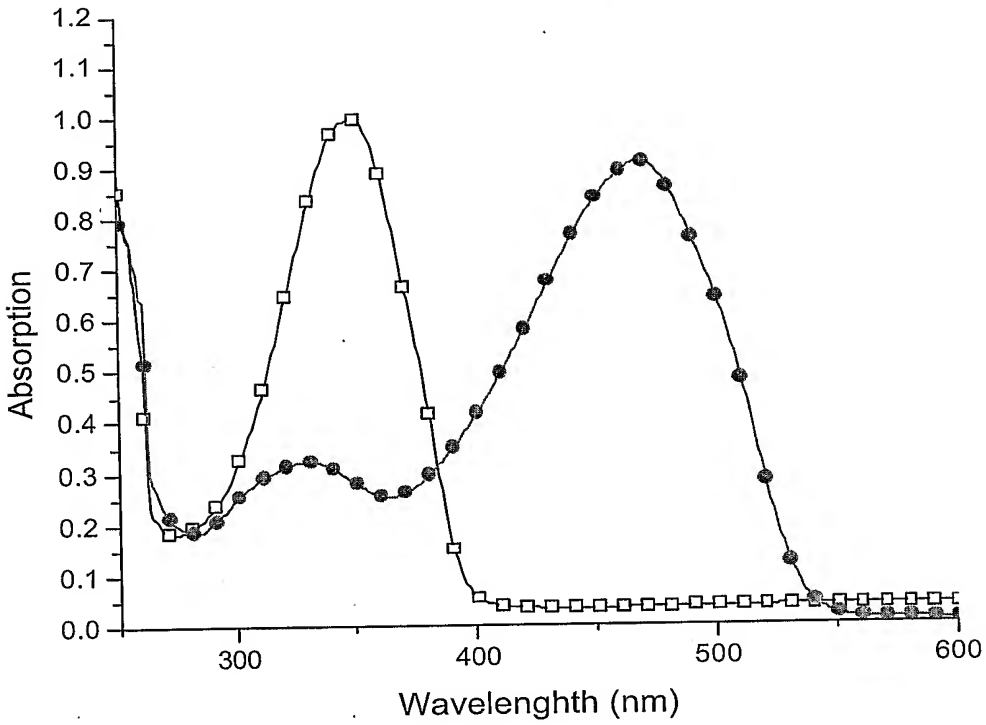
Absorption
Wavelenghth (nm)
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
300
400
500
600

Figure 7.

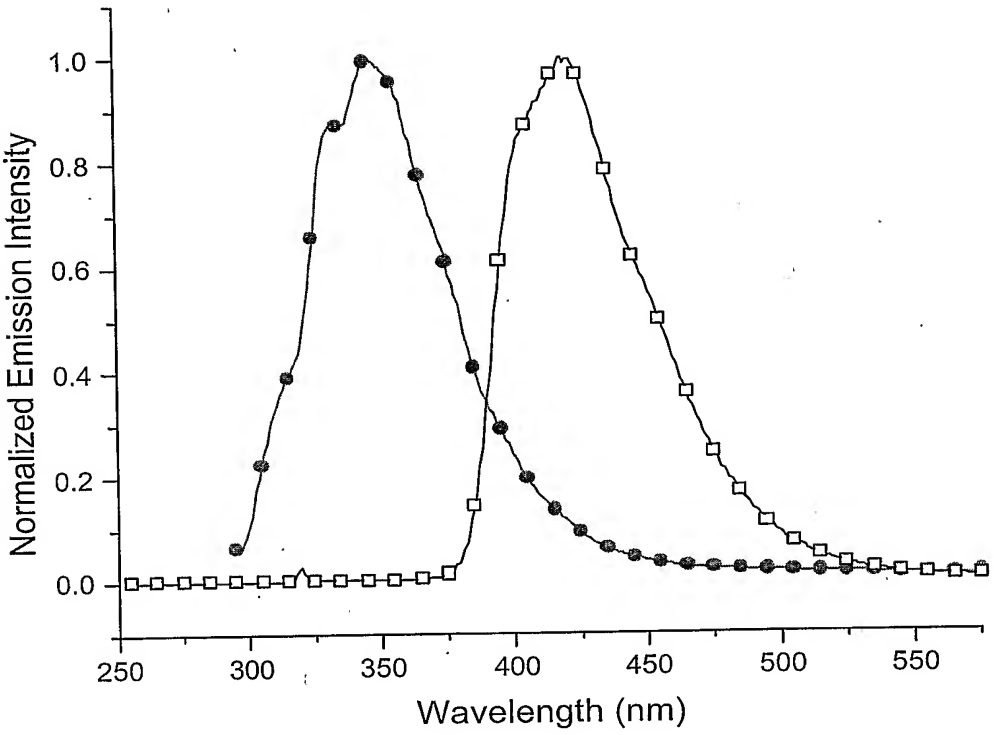
Normalized Emission Intensity
1.0
0.8
0.6
0.4
0.2
0.0
250
300
350
400
450
500
550
Wavelength (nm)

Figure 8.

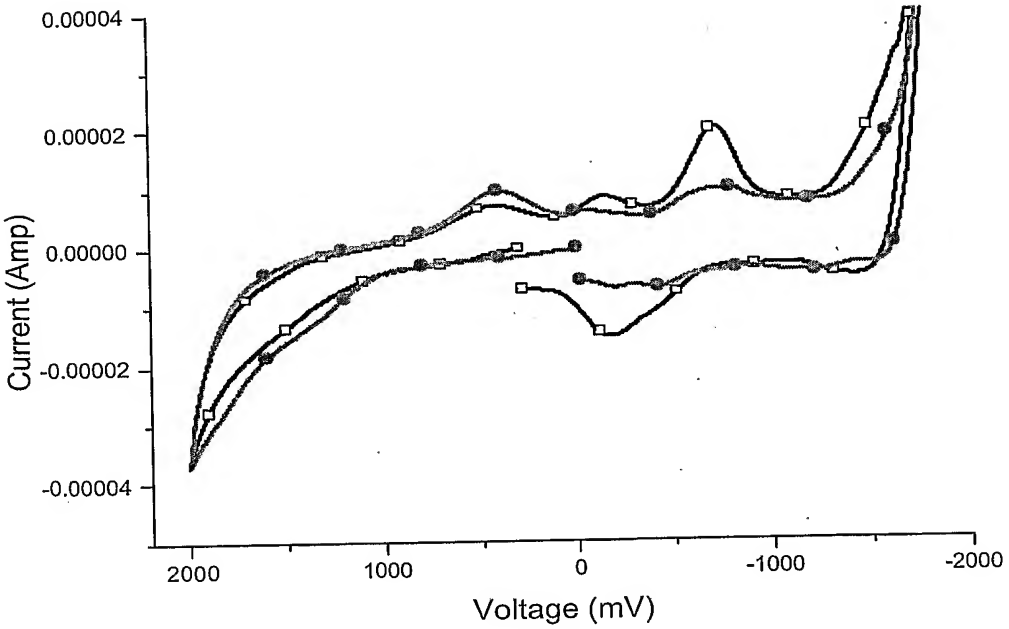
0.00004
0.00002
0.00000
-0.00002
-0.00004
Current (Amp)
2000
1000
0
-1000
-2000
Voltage (mV)

Figure 9.

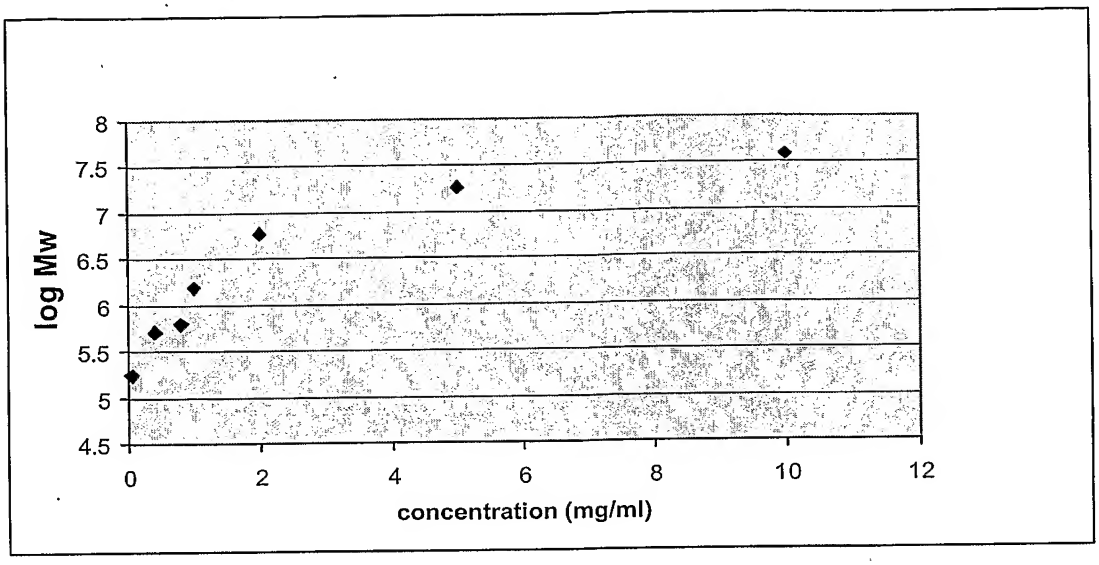

Figure 10.